

## Choosing What to Believe About Forests: Differences Between Professional and Non-Professional Evaluative Criteria

Roje S. Gootee · Keith A. Blatner ·  
David M. Baumgartner · Matthew S. Carroll ·  
Edward P. Weber

Accepted: 8 March 2010 / Published online: 1 April 2010  
© Steve Harrison, John Herbohn 2010

**Abstract** This study examined the process of information exchange between natural resource management professionals and forest owners to determine whether and how professionals could improve their ability to persuade forest owners to adopt recommended stewardship practices. Using the inductive ‘grounded theory’ method of qualitative research, 109 stakeholders throughout the State of Washington, USA were interviewed and asked to discuss their information sources and preferences. The study findings reveal that many natural resource management professionals may not correctly anticipate how forest owners evaluate new forest management information. Professionals in the study typically chose and evaluated new information on the basis

---

An earlier version of this paper was presented at the International Union of Forest Research Organizations (IUFRO) 3.08 Small-scale Forestry ‘Seeing the Forest beyond the Trees’ Symposium June 7–11, 2009 in Morgantown, West Virginia, USA. (accessible online at <http://www.iufro.org/science/divisions/division-3/30000/30800/>).

---

R. S. Gootee (✉)  
Rush Creek Ranch, P.O. Box 243, Long Creek, OR 97856, USA  
e-mail: rushcreek@hevanet.com

K. A. Blatner · D. M. Baumgartner · M. S. Carroll  
Department of Natural Resource Sciences, Washington State University, P.O. Box 646410, Pullman, WA 99164-6410, USA

K. A. Blatner  
e-mail: blatner@mail.wsu.edu

D. M. Baumgartner  
e-mail: baumgartner@wsu.edu

M. S. Carroll  
e-mail: carroll@wsu.edu

E. P. Weber  
School of Environmental and Public Affairs, University of Nevada, P.O. Box 454030, Las Vegas, NV 89154-4030, USA  
e-mail: edward.weber@unlv.edu

of established standards of scientific credibility, including peer review or the professional reputation of the individuals and institutions conducting the research or publishing the information. Most professionals expected forest owners would do the same. Forest owners with non-professional backgrounds, however, were often unfamiliar with or unimpressed by such credentials, and often used a very different evaluative screen. Willingness to adopt information was greatly influenced by their social impressions of the individuals delivering it. When a professional pressed for an 'expert to non-expert' relationship or did not establish a mutually respectful interpersonal learning atmosphere, non-professional forest owners frequently resisted not only that individual, but also the information they provided. This paper links these findings to androgogy (adult learning theory), and demonstrates that the natural resource professionals most effective with forest owners are those providing what the established literature describes as classic elements of a good adult learning environment. These elements include empathy, mutual respect, non-hierarchical information exchange, praxis, emphasis on experiential rather than passive learning, and evidence that tangible results may be expected. An improved understanding of the fundamentals of the adult learning process can be expected to enhance the effectiveness of natural resource professionals in information exchange with forest owners.

**Keywords** Forest owners · Information exchange · Environmental education · Adult education

## Introduction

Forest sustainability is rapidly becoming a matter of global concern. Consequently private forest owners work within an increasingly complex arena of emerging scientific information, technical advancements, social scrutiny and governmental regulation. A forest owner's ability to practice sustainable forest management is closely linked to their ability to locate and understand accurate information about forest ecology and stewardship. Additionally, where private forest practices are government regulated, forest owners need to understand not only the regulations but also the social and ecological imperatives that drive them. Landowners who do not comprehend the rationale for regulations are less likely to willingly comply (Creighton and Baumgartner 2005).

Natural resource management professionals can provide a wealth of knowledge to help forest owners meet these challenges. It is therefore important that professionals advising private forest owners know how to foster an effective learning atmosphere. To do so professionals must understand the owners as well as the forests (Downing and Finley 2005; Cartmell et al. 2006). There is evidence, however, that many professional foresters may be less than optimally effective at convincing the public to understand, accept and adopt recommended forest practices (Luckert 2006).

To aid professionals in assessing their effectiveness as information providers, this study provides an in-depth field analysis of the process of information exchange between private forest owners and natural resource management professionals in the State of Washington, USA. The study findings are then linked to the established

scientific literature pertaining to adult education, thus providing a readily accessible set of guiding principles that can improve a professional's personal effectiveness in information exchange with forest owners. These principles can be expected to be particularly relevant to professionals working within the USA, where the body of referenced adult learning theory was developed.

## Principles of Adult Learning Theory for Forest Management Educators

Androgogical research has long established the fact that adult learners typically seek information providers who respect the learner's experience, are open to non-hierarchical dialogue and a two-way exchange of ideas, and are friendly and empathetic to the learner's circumstances. Adult learners also need to be convinced that the new information is practical, relevant, and can lead to tangible improved outcomes (Knowles 1980, 1984; Rogoff 1984; Vella 1994; Daniels and Walker 2001).

The literature on adult learning theory also reveals the importance that adults typically place upon experiential rather than merely instructional learning. Experiential learning is a cyclical phenomenon rather than a 'snapshot' or isolated event. For example, Kolb's classic model identifies four important phases within the experiential learning process. The learner first engages in a period of 'reflective observation' to determine if and why an issue or problem is important. They then proceed to a phase of 'abstract conceptualization' and begin to envision ways to address the issue or problem. This is followed by a third phase of 'active experimentation' in which the learner begins to test potential solutions. And lastly, through 'concrete experience', the learner applies their chosen solution and may also use them as a catalyst for new, related learning (Kolb 1984; Daniels and Walker 2001). Individuals may pass through these phases at distinctly different paces, and may possess different personal strengths within each phase, but will predictably need to progress through all four.

Hill and Clover, who are among the scholarly pioneers exploring linkages between the adult learning process and the changing human relationship with the environment, pointed out that 'Environmental adult education is a new stream of adult education and is still very much a work in progress. This means that unlike other areas of adult education, materials on this topic are somewhat limited. Nevertheless, they do exist and are growing in numbers' (Hill and Clover 2003:93). Of particular interest is the literature on *transformative learning* (e.g. Cranton 2006). In contrast to the simple assimilation of a new piece of information, this form of learning profoundly changes the learner's perception of truth, and of how they relate to that truth. It may be defined as '...a process by which previously uncritically assimilated assumptions, beliefs, values, and perspectives are questioned and thereby become more open, permeable, and better validated (Cranton 2006:2).

Natural resource management professionals are often attempting to lead forest owners toward this type of transformative experience, because they are trying to persuade forest owners to abandon old perceptions and values that result in poor forest practices, and adopt a new and sometimes vastly different understanding of forests and of the human relationship to the environment. Finger (1989) contended that environmental educators should always be focused on fostering this type of

learning. It may be hindered, however, by the conventional, hierarchical approach of an ‘expert’ treating a learner as ‘non-expert’, because the opportunity for open, reflective dialogue is crucial to transformative learning (Feinstein 2004). By contrast, there is mounting evidence that activists and educators who respect and channel the experiential knowledge of local residents and landowners, rather than resisting or resenting it, can actively promote transformative environmental learning (e.g. Kapoor 2003; Feinstein 2004; Walter 2007; Sumner 2008).

## Study Area and Forest Ownership Context

The study area included the entire state of Washington. Forests comprise about half of the state’s total land base and are integral to its culture and ecology. About 42% of the 22 M total forested acres are privately owned (WA-DNR 2005; Erickson and Rinehart 2005). Washington’s 34 Native American tribes own approximately 6%, or 1.3 M ac of these private forestlands. The industrial forest sector, consisting of about 60 ownerships (Erickson and Rinehart 2005), controls another 27% or about 2.5 M ac (Mason 2007). The majority of the private forests, however—approximately 67% or 5.5 M ac—are held by about 215,000 non-industrial owners (WA-DNR 2001; Rogers and Cooke 2009). About half of these non-industrial forests (51%) are large parcels of 5000 ac or more. The remaining 49% are categorized as ‘small’ forests, most of which are smaller than 100 ac (Erickson and Rinehart 2005).

Private forest owners receive advice and regulatory supervision from the State Department of Natural Resources, Department of Fish and Wildlife, and Department of Ecology. The Federal Natural Resource Conservation Service often provides additional advice and assistance directed primarily toward soil protection. In matters pertaining to federally listed threatened or endangered species, the United States Fish and Wildlife Service or National Marine Fisheries Service also become involved. Washington State University (WSU) Extension is a popular non-regulatory institutional information provider. The US Forest Service works cooperatively with WSU Extension and the State Department of Natural Resources to co-sponsor a popular Forest Stewardship program. Forest owners additionally turn to consultants, forest ownership organizations and peer networks for information.

## Research Method

This paper addresses a subset of results from a larger study of Washington’s innovative ‘Alternate Plan option (APO)’.<sup>1</sup> The APO was developed to render

---

<sup>1</sup> The Alternate Plan option permits forest owners to suggest management alternatives that differ from the State’s prescriptive Forest Practices Rules, if the alternative can be expected to result in equivalent or better levels of protection. The Alternate Plan Option is described in detail in Chapter 222-12-040 of Washington’s Administrative Code (WAC 222 2001), and Chapter 76.09 and 76.13 of the Forest Practices Act in the Regulatory Code of Washington (WA RCW 2002). Both are obtainable through the Washington State Department of Natural Resources; Olympia, Washington, USA (available online at [www.dnr.wa.gov/](http://www.dnr.wa.gov/)).

Washington State's Forest Practices Rules<sup>2</sup> more responsive to individual properties and owners. Extensive information exchange between forest owners and natural resource professionals is integral to the Alternate Plan process.

The individuals who participated in this study were all directly involved in designing, revising, using or administering the APO. This introduced a bias into the study that may even strengthen the results. The APO permits forest owners to design forest management projects custom tailored to a particular site, rather than being obligated to only follow the programmatic forest management prescriptions outlined in the state's forest regulations. An important caveat of the APO, however, is that the forest owner must be able to demonstrate that their proposal can meet or exceed the state's stringent and comprehensive regulatory requirements for ecological protection. Alternate Plan proposals are subjected to rigorous interdisciplinary and interagency review. A proposal cannot meet these standards unless the forest owner has a relatively sophisticated personal understanding of forest ecology or the help of highly credible professionals. Consequently, forest owners who use the APO are active seekers of information and professional assistance and unusually well qualified to compare and contrast information sources. Their experience level means that they can provide invaluable insights for the purposes of this study. It must be noted, however, that these forest owners should not be regarded as having an 'average' or 'typical' level of knowledge about forest practices and regulation, particularly within the NIPF owner category.

The study relied upon the 'grounded theory' method of inductive, qualitative research (described by Glaser and Strauss 1999; Strauss and Corbin 1998; Clarke 2005). 'A researcher does not begin with a preconceived theory in mind ... Rather, the researcher begins with an area of study and allows the theory to emerge from the data' (Strauss and Corbin 1998:12). The sample is selected purposively rather than randomly. The researcher begins with a few key individuals known to be well informed about the research subject. Additional names are then obtained by means of chain referral. The researcher must be careful to follow a full diversity of these chains of referral, thus gathering respondents who represent the full spectrum of viewpoints pertinent to the research subject.

Data are collected by means of in-depth, one-on-one interviews. New participants are sought until further interviews produce only repetitive, rather than new, data. The size and composition of the interview group is therefore determined by the complexity of the research topic and the diversity of the emerging data. Data analysis progresses continually from the beginning of the interview process. Through a process of 'constant comparison' (Glaser and Strauss 1999:105–113), the researcher analyzes the data of each interview line by line, identifies and codes important categories within that interviewee's responses, and then compares those categories against all of those identified in prior interviews. As the data are compared, collective, integrated themes emerge, and '...theory develops, as different categories and their properties tend to become integrated through constant comparisons that force the analyst to make some related theoretical sense of each comparison (Glaser and Strauss 1999:109).

<sup>2</sup> Washington State's Forest Practices Rules are described in detail in Title 222 of the Washington Administrative Code (WAC 222 2001), obtainable through the Department of Natural Resources; Olympia, Washington, USA (available online at [www.dnr.wa.gov/](http://www.dnr.wa.gov/)).

For this study, the interviews were loosely guided to ensure that each covered the same material. Each interviewee was asked to discuss: (1) their background and role(s) in natural resource management; (2) overall impressions of the concept of private forest regulation; (3) perceptions regarding public and private roles in relation to private forest protection; (4) impressions of Washington State's specific policy instruments; (5) impressions of familiar governmental entities charged with administering forest regulatory policies on private land; (6) primary environmental concerns; (7) sources of information regarding forest management and regulation; and (8) their preferences and reasons for preference among those sources. This paper addresses only the subset of results that emerged from the latter two topics (the interviewees' sources of information regarding forest management and regulation, and their preferences and reasons for preference among those sources).

The first author guided each interviewee through the research topics. Participants were encouraged to discuss each in as much detail as they wished, to identify any points of particular importance to them, and to use illustrative examples. Early interviewees were offered a choice between having their interviews recorded on tape or by handwritten notes. It quickly became clear that the note-taking option was less intimidating for many respondents so it was adopted for all subsequent interviews. All interviewees were promised confidentiality and allowed to choose the setting for their interview. This was highly important to many; the forest management community is closely networked, and interviewees said they felt more able to speak freely about policy and administration if their responses were 'off the record'. The handwritten data were typed into a laptop computer immediately following each interview, organizing the raw data into broad preliminary categories within each of the above research topics.

The interviewees included non-industrial, industrial and tribal forest owners, state and federal land management agency personnel, policy advisors, special interest group representatives and consultants. Many of the individuals interviewed had diverse backgrounds and were active in more than one of these stakeholder groups. For example, a consultant might also be a forest owner and a policy advisor, or an agency employee might also be a tribal member. Such persons were often able to be particularly insightful, because they had observed and experienced the process of information exchange from more than one point of view. The forest owners interviewed included representatives of 12 industrial forest companies, 6 Native American tribes or tribal coalitions, and 39 NIPF owners. The number of tribal representatives is relatively low simply because the tribes exercise much of their influence over the state's forest policies via the leaders of tribal coalitions, rather than as individual entities. A few key individuals were therefore able to provide an overarching perspective. Only one timber investment management organization (TIMO) was included, because only one such organization had used the Alternate Plan option at the time of the study. Because this TIMO employed professional staff to design and supervise their timber management activities, and because their manner of using the Alternate Plan option was functionally similar to the more traditional industrial timber companies, for the purposes of this study the TIMO was included in the industrial forest owner subgroup.

In total, 114 individuals were contacted. Two declined to reply to several contact attempts, one declined to be interviewed, and two others could not be located due to address changes. With these few exceptions, interest among respondents was high. 4; 103 interviews were conducted in person at locations throughout Washington State and the remaining six interviews were conducted by telephone.

Interviews were conducted from August 2004 through December 2006. Most interviews took about 2 h. The shortest lasted about an hour and a half, while several with individuals with unusually diverse forest management backgrounds ran as long as 4 h. The data were analyzed through the standard grounded theory technique of ‘constant comparison’ (described by Glaser and Strauss 1999); supplemented by Clarke’s (2005) process of situational word-mapping. These analytical techniques revealed various emergent patterns, themes and theories.

### Forest Management Information Providers

In this study, *information providers* are defined as ‘institutions, organizations or individuals delivering what they personally consider to be authoritative information about forest management and stewardship to forest owners’. For example, an information provider could be a professional providing scientifically substantiated information, a non-professional providing scientifically substantiated information, a non-professional providing information that is purely speculative or hearsay, or a member of a special interest group advocating a perhaps biased viewpoint that they nonetheless personally believe and endorse. The important point is that it is up to the forest owner to sort through a broad range of information from diverse sources and decide what to accept as credible. The forest owner has to choose ‘what to believe about forests.’

The information providers influencing the forest owners who were interviewed can be divided into five categories:

1. *Institutions*, such as agencies, universities and professional membership organizations, wherein nearly all persons producing or delivering information have professional, scientific training in natural resource management.
2. *Consultants*, either individuals or companies, who advise forest owners for a fee. All have relevant experience, and most have professional training and credentials.
3. *Organizational networks*, including forest owner groups, trade groups and other special interest groups whose leaders, members and outside information sources may or may not have professional backgrounds in natural resource management.
4. *Non-organized professional peer networks*, consisting of persons with professional backgrounds related to natural resource management.
5. *Informal networks*, including family, friends or neighbours who may have extensive experiential forest management backgrounds, but who usually do not have professional training.

The forest owners interviewed fit three general ownership categories, viz. industrial timber companies, Native American tribes and non-industrial private forest owners.

## Results

How' one chooses to believe affects 'what' one chooses to believe? Each forest ownership category was found to played a different role, display distinctive patterns of behaviour, and have a tendency to elicit different responses from professionals within the process of information exchange. For example, the industrial timber companies typically employed professional foresters, and often other natural resource specialists. Although many company operations were conducted by other employees without professional natural resource backgrounds, the professional staff obtained and screened much of the new information used by their companies, and largely directed the design of field operations. The companies were also closely networked through a well-organized and politically influential trade organization. They displayed a strong sense of occupational community. The employees interviewed consistently described this combination of in-house expertise, the trade network and a peer network of consultants as their primary information providers. Institutional scientific sources, including professional associations, were also described as important by most.

Since the mid-1970s, Washington's industrial forest owners have proactively endorsed and participated in the state's unusual and highly collaborative approach to forest policy-making. Most said they now understood and accepted the regulatory outcomes. Most of the regulatory agency employees interviewed agreed that the timber companies currently presented relatively few problems in terms of regulatory compliance. Consequently, the atmosphere of information exchange between employees of the timber companies and the regulatory institutions was generally positive. Although a hierarchical relationship was inherent due to the regulatory authority of the agencies, its exercise was generally described as relatively low key. Information transfer often took the form of a peer-to-peer interaction. As one state employee summarized, 'We don't see many problems from the timber companies. Most of them know what they need to do, and just want to keep things running smoothly.'

Tribal forest owners occupy a distinctly different niche in the arena of forest policy and information exchange. In addition to managing their tribal forests, Washington's 34 Native American tribes influence the state's forest policies on other public and private land through important treaty rights that were judicially revalidated in 1974.<sup>3</sup> Each of the tribes and coalitions in the study employ

<sup>3</sup> United States of America, Plaintiff, Quinault Tribe of Indians on its own behalf and on behalf of the Queets Band of Indians *et al.*, Intervenor-Plaintiffs, v. State of Washington, Defendant, Thor C. Tollefson, Director, Washington State Department of Fisheries, *et al.*, Intervenor-Defendants. Civ. No. 9213; United States District Court for the Western District of Washington, Tacoma Division; 384 F. Supp. 312; 1974 U.S. Dist. LEXIS 12291; February 12, 1974 (commonly referred to as 'The Boldt Decision').



professional natural resource management specialists to help them fulfill these responsibilities. They also conduct independent research. Interviewees indicated that many tribal members who do not have professional backgrounds have extensive traditional and experiential knowledge pertaining to forest management. Tribal members and employees described the tribes as generally relying most heavily upon institutional sources, particularly universities and peer-reviewed publications, as outside sources of information.

The process of information exchange between the tribes and most non-tribal natural resource professionals lacked the hierarchical relationship evident in institutional interactions with the industrial and NIPF ownership groups. Because the tribes are legally sovereign nations they are not subject to state or federal forest management laws. Government institutions do not control or regulate tribal forest policy or practices and are therefore more likely to interact with the tribes as legal equals. Many natural resource professionals also accorded the tribes peer respect due to the high quality of their independent research and forest management practices. As one federal employee said, 'The tribes are more and more impressive. We consider many of them pretty much on a par with the State agencies'.

In marked contrast to the two other forest ownership groups, the NIPF owners interviewed were a diverse group which included individuals, families, small collaboratives, small and large legal partnerships, homeownership organizations and public destination facilities. The relationship between natural resource professionals and most of these NIPF owners was notably more 'vertical' or hierarchical than that between professionals and the industrial or tribal forest owners. Many institutional professionals interviewed described NIPF owners as less well-informed than other types of owners. Consequently, professionals often approached NIPF owners with an intention of 'teaching' them how to improve their forest practices. Many NIPF owners, however, resisted this hierarchical expert-to-layperson approach, considering it inappropriately dismissive of their own knowledge of their forests and their status as owners. For example, one forest owner said 'The agencies want me to listen to them, but a lot of those folks sure don't seem interested in listening to me'.

Some of the NIPF owners are active tree farmers with professional backgrounds in natural resource management or strong experiential backgrounds supplemented by regular advice from a professional consultant. This subcategory described markedly different experiences in the process of information exchange than the non-professional NIPF owners. The professional NIPF owners tended to feel competent to evaluate even complicated new forest management information independently. Often, they personally designed the management strategies for their forests. They were familiar with the intricacies of the regulatory system and confident in their own ability to navigate its required process of permit applications. The professional NIPF owners were also frequently involved as formal or informal leaders in state or national forest owner groups. They were generally closely networked and displayed a strong sense of occupational community, relying greatly upon one another for learning. Some were also politically active, acting as advisors in the forest policymaking arena. Consequently most were well-known to agency employees and policymakers, regarded as influential and respected stakeholders, and accorded a level of peer respect. An agency employee described one professional NIPF owner

by saying ‘He’s essentially been the voice of small-scale private forestry in this state. It’s hard to imagine anyone doing more for that cause than he has’.

Many NIPF owners interviewed, however, did not have this type of strong professional background or regular professional support. These non-professional NIPF owners differed in many important ways from the professionals, including in their information exchange experiences. They had far more diverse backgrounds and forest ownership goals and were looking for a wider range of information. Many lacked confidence in their own ability to evaluate forest management information independently. Few displayed an inclination to join forest owner organizations, network with many other owners, or become involved in the political aspects of forest policy-making. Instead, most had found one or a few reliable individuals, either professional or non-professional, to whom they turned most often for information. ‘I can trust my consultant. I’ve worked with him off and on for years and I know he’s got my best interests in mind. Plus, the [regulatory] agencies know he’s good, and that makes my life a lot easier when it comes to dealing with the agencies’, said one non-professional NIPF owner. Many of these non-professionals shunned information providers whom they did not personally know and trust. It was common for individuals in the non-professional group to describe frustration or resentment toward institutional information providers in general. In their opinion, many of these providers seemed ‘out of touch’ with the circumstances of private forest ownership, and unconcerned about the forest owner’s needs, wishes or experience. Although many of these forest owners said they had highly positive experiences and accepted information readily from particular, individual, institutional professionals, they often described these individuals as exceptions to their usual more negative experiences, and said they were much more reluctant to engage with most other institutional professionals who tried to provide them with information.

#### Differences Between Professionals and Non-Professionals with Regard to Evaluative Criteria

An important theory emerged from the data, namely that professionals and non-professionals tend to use markedly different evaluative criteria when selecting and adopting information pertaining to forest management and stewardship. Natural resource management professionals, including the few NIPF owners with professional resource management backgrounds, typically evaluated new forest management information based upon the merits of the information itself, or its producers. They referred to widely accepted criteria such as ‘professional reputation’, ‘scientific credibility’ and ‘peer review’. Consequently, many professionals considered information *deliverers* to be largely interchangeable. In other words, professionals indicated they would generally accept the same piece of information as readily from one deliverer as from another. These professionals often said they realized they were not as effective as they wished to be at convincing forest owners to believe them, but were puzzled about the causes of the problem. ‘The science speaks for itself. I don’t really understand why so many of them [the forest owners] want to keep arguing about it’, said one agency employee.

The forest owners shed substantial light upon this phenomenon. Rather than using criteria such as professional credibility, most non-professional forest owners relied heavily upon their *social* impressions of the information *deliverer* when deciding whether to adopt new information. Because the non-professional owners often did not feel confident in their own ability to evaluate the technical merits of the new information, they turned instead to the things they *did* feel competent to evaluate: the perceived attitude and intent of the individuals delivering the information. This subjective impression was often a predominant factor in their decisions regarding which information to adopt. Professional credentials and scientific rigour were therefore not usually their only or final decision criteria.

Consequently, many of the non-professional NIPF owners' did not consider information deliverers interchangeable. Few were tolerant of a professional whom they did not believe respected their personal situation or experience. When this empathy seemed lacking they would turn to another advisor if possible. Several said they would turn to informal or non-scientific sources if they did not feel respected or understood by the professional information provider. For example, one forest owner who described preferring to learn from a neighbouring non-professional owner concluded, 'At least he actually knows what it is like to be me'.

Most consultants, extension foresters, and a few agency employees closely predicted how forest owners would choose information and its deliverers. Notably, many of these same individuals were mentioned by name by forest owners as 'good' information sources, indicating that these professionals not only recognized what was needed, but were largely successful at providing it. Many other professionals, however, did not clearly understand what non-professional forest owners sought. These professionals often expressed frustration that forest owners seemed indifferent or resistant to the information they provided, even information based upon what the professional regarded as indisputable science. In the interviews, forest owners often identified these particular professionals by name as individuals they resisted and did not like or trust. This dichotomy underscores the importance of interpersonal relationships in the process of forest management information exchange, particularly when working with non-professionals who may be looking for a trusted guide, rather than just raw information.

## Discussion

The results of this study fit closely with principles well established in the scientific literature pertaining to androgogy, i.e. adult learning theory. Most forest owners interviewed, in all ownership categories, displayed highly predictable traits of adult learners. They sought professionals who were friendly, empathetic, and expressed respect for the forest owners' own experience and circumstances. Most wanted the opportunity for a two-way exchange of information. They resisted professionals who cast themselves as 'experts' and the forest owner as 'inexpert'. Most also wanted a clear and convincing explanation about why the new information was relevant and how it could provide tangible results that made sense to the forest owner.

The forest owners who were satisfied with a learning experience described information providers who offered most or all of these elements. Owners who expressed dissatisfaction generally described professionals who had failed to embody these qualities. Notably, many forest owners who described feeling at ease in the overall environment of forest management learning were industrial forest owners, tribal forest owners, and the few NIPF owners who were active tree farmers. Most members of these forest ownership groups were either professionals themselves, or non-professionals with highly competent professional consultants or an unusually extensive base of experiential knowledge. These credentials had earned them a level of peer status from the professional community. Institutional professionals more often interacted with these types of forest owners as respected equals.

Within the NIPF owner category, however, where natural resource professionals more often interact with non-professional forest owners, the process of information exchange often left much to be desired. Non-professional forest owners frequently complained of an absence of core elements of an effective adult learning environment. They described an apparent lack of respect from many professionals, and am impressions that they were regarded as inferiors. Many professionals gave the impression of being reluctant or unwilling to give credence to the viewpoints or experience of the forest owner. Many professionals were also bypassing the crucial early phases of the learning cycle. In other words, they were failing to explain the rationale behind new concepts or regulations before requiring the forest owners to implement them. As a result, many of these NIPF owners described themselves as inclined to resist certain professionals and reluctant to accept or adopt much of the information they provided. In view of the fact that the vast majority of forest owners worldwide—including nearly 215,000 in Washington State alone—fall into this category of non-professional NIPF's, such an unconvincing learning environment can be expected to have substantial negative consequences, both ecologically and socially.

Professionals may be overlooking the importance of actively cultivating a positive learning environment simply because so many of the elements necessary for effective adult learning are inherent within the professional community. For example, many natural resource professionals described their peer community as almost familial. The respect, acceptance, and situational empathy so integral to effective adult learning are often commonplace in information exchanges between professionals. In particular, many consultants and land management agency employees described this type of atmosphere. Professionals may, therefore, take their own more positive learning environment for granted and fail to notice when it is lacking in the experience of others.

Professionals also begin much of their new learning from a previously established educational background. They have long passed the earliest phases of the forest management learning cycle; they already understand 'why' a forest management concept or practice is important. Because its relevance seems so obvious to them, they may fail to realize that it could easily seem less so to a non-professional forest owner. For the professional, any new learning about a particular concept tends to be incremental rather than largely new or foreign as it may be to a non-professional. Among non-professionals, by contrast, the newness and technical complexity of many ecological concepts may seem daunting. This implies that the

earliest stages of the learning cycle are especially important, because it is during these phases that the non-professional begins to understand and accept ‘why’ altered forest management strategies are appropriate and deserving of adoption. In the eyes of many of the forest owners we interviewed, however, these early phases of the learning cycle are often the most neglected by many institutional professionals attempting to educate forest owners.

These results do not imply that regulatory institutions and other professionals do not provide valuable services, or that they are inherently limited in their ability to create a style of information exchange more appreciated and accepted by forest owners. What is needed is simply a realignment of institutional foci; natural resource professionals need to be prepared to understand and address not only the needs of the forests, but also the forest owners whom they seek to inform and engage as better stewards. This does not mean that professionals must necessarily develop close, continuing relationships with all forest owners, which would require a level of service that no institution could realistically provide. Except from their consultants, most of the forest owners interviewed did not expect, or even desire, such a level of recurrent interaction. In fact, many forest owners only called upon institutional professionals when undertaking a regulated forest practice on their property. Their relationship of information exchange with these professionals is often brief. When forest owners did interact with these institutions, however, they sought, but often did not believe they found, what might best be termed ‘professional courtesy’. The cultivation of this type of respectful atmosphere does not require complicated changes in institutional practices or staffing. It simply requires that professionals are themselves trained to recognize and cultivate the elements of an effective adult learning environment.

## Conclusion

The contrast between the learning environment experienced by most natural resource professionals and that described by many non-professional forest owners appears striking. Professionals typically were accorded what amounted to membership status among their peers, and a related level of collegial respect. Their employers often made opportunities, materials and funding for learning readily available to them. New subjects were often closely aligned with the professional’s personal interests, i.e. the relevance of the material was already clear to them. In other words, many core elements that researchers have long identified as essential for effective adult learning—self-direction, reciprocal respect between information providers and learners, situational empathy, praxis, and immediacy of applicability—tend to be largely inherent in the professional world.

Non-professional forest owners, by contrast, particularly among the NIPF owner group, often described a markedly different learning environment, one in which many of these key elements were lacking. They often were left with an impression of veiled disrespect from professional resource managers, particularly those from the regulatory agencies. Many of these owners said they found a collegial atmosphere and peer respect primarily within their forest owner organization or the

circle of family and friends who acted as their ‘informal information providers’. The empathy they experienced among these providers often led forest owners to prefer them, even though some of the information obtainable from these sources might not be scientifically based or ecologically sound.

A number of excellent studies have examined forest owner reactions to various information *delivery* formats such as printed materials, workshops, field visits, and internet or other media (Magill et al. 2004; Cartmell et al. 2006). Few, however, have examined forest owner expectations of individuals who *deliver* the information. This study is unique in that it links forest management information transfer to the principles of androgogy, and reveals that forest owners expect professionals to provide not only information, but also what theoreticians of androgogy have long recognized as classic elements of a good adult learning environment (e.g. Knowles 1980, 1984; Vella 1994).

The findings of this study demonstrate that an important prerequisite for effective information exchange with forest owners is a readiness on the part of natural resource management professionals to understand what adult learners expect. As Haugen (2006:102) so aptly described, educators need to facilitate a safe and non-critical atmosphere in which participants feel ‘called to action and motivated to learn’. Adult learners look for reciprocal respect from the educator, and ‘horizontal’ rather than primarily ‘vertical’ or hierarchical avenues for dialogue and information exchange. They want pragmatic evidence that the new information ‘fits’ their circumstances, and a willingness on the part of the educator to understand the viewpoint of the learner. The professionals who failed to offer this type of learning environment were only sub-optimally effective at convincing forest owners to adopt willingly the information they recommended. By contrast, the professionals who did provide the core elements of empathy, reciprocal respect, thorough explanation, and an openness to two-way learning found that their forest management recommendations were generally much more readily accepted.

It should not be inferred that the principles of adult learning theory will be applicable or adaptable to all international settings. They are founded in ‘western’ culture and reflect the expectations of a relatively affluent society and generally well educated professionals and learners. It can be expected, however, that these results are not unique to the State of Washington and can be useful elsewhere in the United States and perhaps beyond. As Mellow (2005:68) concluded, ‘being professional’ requires a different touch when dealing with rural non-professionals in general. Professionals are trained to be convinced by empirical data and professional and scientific credentials. This paradigm is often foreign in rural communities. Within the USA and other developed western nations, for example, rural residents customarily admire and adhere to a set of acceptance criteria based upon experiential learning, kinship and neighbourliness. This study indicates that an important part of ‘being professional’ when working with these types of forest owners is the readiness to move away from the hierarchical form and intellectual distance of the ‘expert versus non-expert’ relationship, and toward the more empathetic, open and mutually respectful dialogue long recognized as preferred by adult learners. As one forest owner interviewed summarized, ‘It’s not just about forests, it’s about people.’

## References

- Cartmell D, Orr C, Kelemen D (2006) Effectively disseminating information to limited-scale landowners in the urban/rural interface. *J Ext* 44(1). Accessed online on 11/08/2006 at <http://www.joe.org/joe/2006february/a5.shtml>
- Clarke A (2005) *Situational analysis: grounded theory after the postmodern turn*. Sage Publications, Thousand Oaks
- Cranton P (2006) *Understanding and promoting transformative learning: a guide for educators of adults*. Jossey-Bass, San Francisco
- Creighton J, Baumgartner D (2005) Washington State's forest regulations: family forest owners' understanding and opinions. *West J Appl For* 20(3):192–198
- Daniels S, Walker G (2001) *Working through environmental conflict: the collaborative learning approach*. Praeger Publishers, Westport
- Downing A, Finley J (2005) Private forest landowners: what they want in an educational program. *J Ext* 43(1). <http://www.joe.org/joe/2005february/rb4.shtml>, accessed 11/08/2006
- Erickson A, Rinehart J (2005) Private forest ownership in Washington State. Background discussion paper prepared for Saving Washington's Working Forest Land Base forum, College of Forest Resources, University of Washington
- Feinstein B (2004) Learning and transformation in the context of Hawaiian traditional ecological knowledge. *Adult Educ Q* 54(2):105–120
- Finger M (1989) Environmental adult education from the perspective of the adult learner. *Convergence* 22(4):25–32
- Glaser B, Strauss A (1999) *The discovery of grounded theory: strategies for qualitative research*. Aldine de Gruyter, New York
- Haugen C (2006) Environmental adult educator training: suggestions for effective practice. *Convergence* 39(4):91–106
- Hill L, Clover D (eds) (2003) *Environmental adult education: ecological learning, theory, and practice for socioenvironmental change*. Issue 99 of the Jossey-Bass quarterly report series *New Directions for Adult Learning and Education*. Jossey-Bass, San Francisco
- Kapoor D (2003) Environmental popular education and indigenous social movements in India, pp 47–57. In: *Environmental adult education: ecological learning, theory, and practice for socioenvironmental change*. Issue 99 of the Jossey-Bass quarterly report series *New Directions for Adult Learning and Education*. Jossey-Bass: San Francisco
- Knowles M (1980) *The modern practice of adult learning: from pedagogy to androgogy*, 2nd edn. Ffollet, Chicago
- Knowles M (1984) *Androgogy in action: applying modern principles of adult learning*. Jossey-Bass, San Francisco
- Kolb D (1984) *Experiential learning: experience as the source of learning and development*. Prentice-Hall, Englewood Cliffs
- Luckert M (2006) Has the myth of the omnipotent forester become the reality of the impotent forester? *J For* 104(6):299–306
- Magill DJ, McGill DW, Fraser R (2004) Refining outreach to woodland owners in West Virginia—preferred topics and assistance methods. *J Ext* 42(4). <http://www.joe.org/joe/2004august/rb5.shtml>, accessed online on 11/8/2006
- Mason L (2007) *Changing private forest management intensities: Western Washington*. Discussion Paper 6, Final Report, Future of Washington's Forest and Forest Industries Study, 7 pp. University of Washington, Seattle
- Mellow M (2005) The work of professionals: doing the *gemeinschaft-gesellschaft* gavotte. *Rural Sociol* 70(1):50–69
- Rogers L, Cooke A (2009) *The 2007 Washington State Forestland Database Final Report*. March 24, 2009. University of Washington College of Forest Resources. [http://www.ruraltech.org/projects/wrl/fldb/2009\\_report/index.asp](http://www.ruraltech.org/projects/wrl/fldb/2009_report/index.asp), accessed 10/09/2009
- Rogoff B (1984) *Everyday cognition: its development and social context*. Harvard University Press: Cambridge, MA (as cited from Daniels S, Walker G (2001) *Working through environmental conflict: the collaborative learning approach*. Praeger Publishers, Westport)
- Strauss A, Corbin J (1998) *Basics of qualitative research: techniques and procedures for developing grounded theory*, 2nd edn. SAGE Publications, Thousand Oaks

- Sumner J (2008) Protecting and promoting indigenous knowledge; environmental adult education and organic agriculture. *Stud Educ Adults*, 02660830 40(2): 1–10
- Vella J (1994) *Learning to listen: learning to teach*. Jossey-Bass, San Francisco
- WAC 222 (2001) Washington Administrative Code Chapter 222 ‘Forest Practices Rules’ and Section 040, ‘Alternate Plans—Policy’, also Section 0401 ‘Alternate Plans—Process’. Printed Forest Practices Manual obtained from Washington State Department of Natural Resources, Olympia
- WA-DNR (2001) State of Washington, Department of Natural Resources Fact Sheet No. 01-119. Published by Washington Department of Natural Resources: Olympia
- WA-DNR (2005) State of Washington, Department of Natural Resources (WA-DNR). Survey of general forest conditions. <http://dnr.wa.gov/htdocs/rp/forhealth/2005highlights/fhgencondinter.htm>, accessed 01/23/2007
- Walter P (2007) Adult learning in new social movements: environmental protest and the struggle for the Clayoquot Sound rainforest. *Adult Educ Q* 57(3):248–263
- WA RCW. Washington’s Forest Practices Act (2002) Chapter 76.09 ‘Forest Practices’ and Chapter 76.13 ‘Stewardship of Non-industrial Forest and Woodlands’. Printed version obtained from Washington State Department of Natural Resources; Olympia